

Variable Feeding bottle with flow for feeding infants

Description of EP0555165

The present invention milks with the feeding-bottles used for the food of the infants.

It is known that in its traditional form, a feeding-bottle is formed by the assembly of three separated elements, namely a container, tÃ©tine and a ring screwed for the dismountable fixing of this tÃ©tine on the threaded collar of the container. If until these last years, the containers were established with a substantially cylindrical form with right profile, bottles with bent profile were recently proposed which limit the risk of admission, inside the mouth of the child, the air which overcomes the liquid level inside the container, for as much obviously than the feeding-bottle suitably is directed at the time of tÃ©tine, i.e. with the closed part or melts turned upwards.

It will be pointed out in addition that one knows tÃ©tines in which the opening practised in end of tÃ©terelle for the passage of the liquid is shaped so that the allowed flow can be regulated by modifying the orientation of the above mentioned opening in the mouth of the infant. This type of tÃ©tine received a sharp success in consequence of the interest of the adjustment which it makes it possible to obtain on the flow, according to the age of the child, of its appetite, thick nature more or poins of food, etc... In practice, the use of a feeding-bottle equipped with such tÃ©tine is facilitated while envisaging on the wall external of this one of the signs of location, generally formed by veins of which the number is growing with the flow (generally from 1 to 3).

One includes/understands without sorrow which if this adjustment of flow realising orientation of the feeding-bottle compared to the mouth of the child does not raise any practical difficulty when one deals with container with right profile, it does not go from there in the same way when the feeding-bottle is equipped with a bottle with profile bent of the above-mentioned kind. Indeed, in such a case, the user must take guard to suitably direct tÃ©tine towards the collar of the container before carrying out the screwing of the ring of assembly, being observed that the initially selected orientation is likely to be modified in consequence of the friction which exerts while turning the aforementioned ring on the annular flange of tÃ©tine.

It is with this disadvantage that mainly intends to cure the present invention, which primarily consists in interposing, between tÃ©tine and the ring of assembly, an intermediate casing who is made angularly interdependent of tÃ©tine while being free to turn compared to the ring in order to before allow the easy orientation of the aforementioned tÃ©tine the complete screwing of the ring.

The intermediate casing can be consisted an autonomous part, completely independent of the ring of assembly. However, in order to prevent that the user has to handle a fourth dismountable element at the time of the cleaning of the feeding-bottle or the filling of this one, there seems preferable to make so that the casing is made interdependent, for example by simple elastic click-and-ratchet work of combined parts, of the ring while remaining free to turn along its axis compared to this one.

In addition, one advantageously makes comprise with the face of an annular base plate of the casing which is turned in direction of the flange of tÃ©tine, a clean annular projection, at the time of the screwing of the ring, to take support against the above mentioned flange of which a part is thus pushed back inside a radial channel of air intake practised for this purpose in the final edge of the collar of the container. One can thus proportion in a very precise way the flow of air intake in the container.

The angular solidarisation of tÃ©tine and the casing can be very simply obtained while envisaging, on the wall external of the first and the interior wall of the second, a system of veins and residences combined. One will observe on this point that the veins are likely to be consisted the reference marks usually envisaged on tÃ©tines with adjustable flow.

The annexed drawing, given by way of example, will make it possible to better include/understand the invention, the characteristics which it presents and the advantages which it is likely to get.

Fig. 1 is a sight in prospect showing, before their assembly, the three components of a feeding-bottle

established in accordance with the present invention.

Fig. 2 is an axial cut of detail of the intermediate casing and ring of assembly, before their solidification by click-and-ratchet work.

Fig. 3 represents, substantially on the same scale as fig. 2, the three elements of fig. 1 after assembly, of wrenchings making it possible to see the various parts well.

Fig. 4 is a diagrammatic transverse section according to the plan indicated in IV-IV in fig. 3.

In fig. 1, reference 1 indicates a container with bent profile of known type, reference 2 a valve to adjustable flow and reference 3 the unit formed by a ring of assembly and an intermediate casing.

At the traditional way, the open collar 10 of container 1 presents a threading in order to cooperate with the ring of assembly of element 3. It will be noted that according to an advantageous provision of the invention which one will further speak again, the final face of collar 10 is radially dug at least depression or channel 11, while the wall external of the container comprises, immediately below of the aforesaid collar 10, a projecting reference mark 12.

Valve 2 is of traditional type and of this fact presents, contrary to its cover 20 cut out of a shaped opening 21 to ensure an adjustable flow, a flange 22 above which it is envisaged three longitudinal groups of vein 23 forming reference mark for the output control.

As indicated higher and like definitely visible in fig. 2, element 3 initially includes/understands a ring 30 threaded internally into 31 to be screwed on collar 10. With the usual way, the cylindrical skirt of this ring 30 ends upwards in an annular transverse disc 32, but this one presents on its interior wall a projection 33 at annular profile. One will still note that the wall external of the ring presents a relief 34, ready to form reference mark, as it further will be exposed.

In the axial opening of disc 32 comes to engage the cylindrical skirt of the intermediate casing 35. The base of this skirt is interdependent of a base plate 36 dug of an annular depression 36a, which shaped and is dimensioned to receive, by elastic encliquetage, the projection 33 which is retained there while allowing the free rotation of two parts 30 and 35 one compared to the other. It will be still observed that contrary to the depression 36a it is envisaged an annular relief 37, and that the internal wall of the casing is dug longitudinal residences 38 profiled to receive with reduced type font the vein-reference marks 23 of valve 2; at the level of each housing 38, the wall external of the casing presents a projecting part 39 which reproduces one of the groups of veins 23, in order to form itself locates.

It is understood that valve 2 is likely to be axially committed in the opening of casing 35 and that with the help of a suitable reciprocal orientation of two elements 2 and 3, the veins 23 are likely to be introduced into residences 38. Valve 2 is thus made angularly interdependent of casing 35.

It is then enough for the user to adapt by screwing ring 30 on collar 10. Screwing is stopped a little before final blocking, so that the user can freely act on casing 35 in order to direct reference marks 39 according to the desired flow have regard with the orientation of the closed bottom of container 1 in position of use. One will observe that the effect of pressure exerted by the transverse disc 32 on base plate 36 of casing 35 does not determine on the flange 22 of valve 2 any angular effort of torsion, by avoiding kind any risk of damage of the aforementioned flange. It will be noted in addition that the angular operation of casing 35 and valve 2 is made very easy in consequence of the plastic smoothies which constitutes the aforementioned casing and rings 30.

Reference marks 12 and 34 are positioned in manner such as they come to be laid out in coincidence when ring 30 is completely screwed on collar 10. At this time, valve 2 is blocked angularly with casing 35 in consequence of the action of tightening exerted by projection 37 on the flange 22; the pressure thus exerted obliges the part of the flange 22 which is in with respect to channel 11 to become deformed to penetrate partially in the aforementioned channel, so that when the two veins or reference marks 12 and 34 were brought in coincidence, the user is certain that the flow of entry of the air in container 1 will be correct.

It is advisable here to observe that the output control of air intake is so precise that it is likely to compensate or to even replace the output control of food obtained by the orientation of opening 21 from

tAoterelle the 20 in the mouth of the nourisson, which facilitates obviously the use of the feeding-bottle since it is enough for the user to stop the screwing of ring 30 a little before or a little after two reference marks 12 and 34 are in perfect coincidence.

The use of the feeding-bottle is simplified thus considerably, without requiring a tiresome training. It goes without saying the feeding-bottle can be equipped with a usual lid, type of that illustrated into 4 in fig. 3.

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Feeding bottle with variable flow for feeding infants

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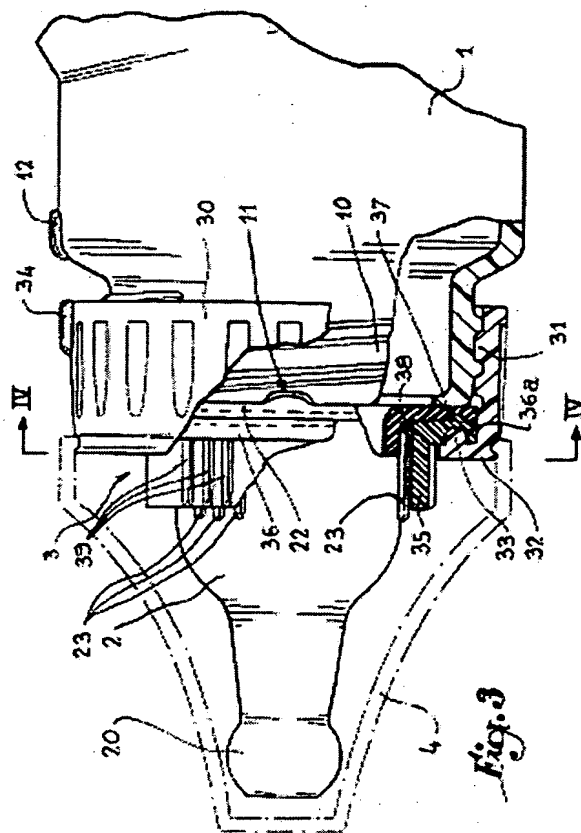
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Abstract of EP0555165

In order to make it easier to adjust the direction of the teat (2) relative to the mouth of the infant in the case of a container (1) having a curved profile, an intermediate bushing (35) is provided which is integral with the said teat, while at the same time remaining free to turn relative to the connecting collar (30) before the latter has been screwed tight.

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